Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

 We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

writers? Did Aristotle actually claim that a heavier body falls faster in proportion to its weight? Some years ago an English writer, J. H. Hardcastle, denied this. Quoting a brief passage from Aristotle he argued that historians had grievously erred, that the great Peripatetic had been stupidly misunderstood. . . . Other of England's noted scientists made brief comments, basing their arguments on the one passage taken from Aristotle. Thus G. Greenhill, William Ramsay, and Oliver Lodge arrive at the conclusion that Aristotle has been misinterpreted, that he did not mean a body ten times heavier would fall from rest ten times faster, that he was thinking of a body moving through a resisting medium, like the air, which greatly modifies the motion, and was considering, not its initial, but its terminal velocity." They "did not themselves go back to search in Aristotle's writings; their deductions were based on the one quotation which had been brought to their attention. As a matter of fact, that one quotation gave only a partial exposition of Aristotle's theory."]; "Gerbert's letter to Adelbold" by G. A. Miller, 649–653; "The mathematics needed in freshman chemistry" by L. W. Williams, 654–665 [A classified list of over three hundred "mathematical" terms is given. The list includes such terms as "subdivisions," "double," "year," "1/3."]; "Do high school pupils dislike mathematics" by W. E. Gingery, 674–675; Problems and Solutions, 676–679; "Reception to the members of the National Committee of Mathematics Requirements for Secondary Schools" by W. J. Ryan, 696, 698—November: "An analysis of an experiment in teaching first year mathematics" by Ina E. Holroyd, 757–764; "Some plane geometry problems" by Lida C. Martin, 765–769; Problems and Solutions, 787–790; "The National Committee on Mathematical Requirements," 798, 800.

TÔHOKU MATHEMATICAL JOURNAL, volume 19, nos. 3–4, July, 1921: "The late Prof. Dr. Tetsugo Kojima" (Japanese), insert; "Sur les surfaces sphériformes" by G. Tiercy, 149–163; "Über Maxima und Minima von quadratischen Formen mit unendlichvielen Variabeln" by T. Kubota, 164–168; "Sur les équations différentielles homogènes" by F. Sibirani, 169–172; "On the roots of an algebraic equation" by M. Tajima, 173–174; "On the solutions of Mathieu's equations of the second kind" by S. C. Dhar, 175–182; "Cyclotomic sexe-section" by P. O. Upadhyaya, 183–186; "On the twisted cubic of constant curvature" by S. Narumi, 187–195; "On the characteristic property of the conic section" by S. Narumi, 196–204; "On the osculating conics of a plane curve" by T. Hayashi, 205–209; "Ueber gewisse Infinitesimal-Operationen der höheren Operationsstufen" by R. E. Moritz, 210–237; "Bemerkungen zu der Arbeit von Herrn Ogura: 'On the theory of the tides'" by O. Perron, 238–240; "Bemerkung über die Mittag-Lefflerschen Funktionen $E_a(z)$" by G. Pólya, 241–248; "Pentaspherical geometries in noneuclidean space, I" by T. Ota, 249–270; Shorter notices and reviews, 271–275; Miscellaneous notes, 276–279.

ZEITSCHRIFT FÜR ANGEWANDTE MATHEMATIK UND MECHANIK, volume 1, August, 1921: "Über algebraische Gleichungen, die nur Wurzeln mit negativen Realteilen besitzen" by J. Schur, 307–311.

UNDERGRADUATE. MATHEMATICS CLUBS.

All reports of club activities should be sent to E. L. DODD, 3012 West Ave., Austin, Texas.

CLUB ACTIVITIES.

THE MATHEMATICAL CLUB OF ADELPHI COLLEGE, Brooklyn, N. Y.

The Mathematical Club of Adelphi College was founded in the fall of 1898; and is apparently one of the oldest mathematical clubs in the country. Membership is open not only to students but to their friends. Meetings are held the second Wednesday of each month, and are well attended. The club has also a social meeting once a year.

During the year 1920–21 talks have been given upon the topics: "Lewis Carroll as a mathematician;" "Women as mathematicians;" "The trisection of an angle;" and certain topics suggested in THE AMERICAN MATHEMATICAL MONTHLY.

(Report by Evelyn Brisbane, secretary.)

THE MATHEMATICS CLUB OF COOPER UNION, New York City.

The Mathematics Club of Cooper Union was organized October 11, 1920. At this meeting it was decided to limit active membership for the current year to first-year and second-year

students. But on April 18, 1921, it was decided to open active membership for the next year to all classes.

Officers were elected January 24, and were re-elected April 18, as follows: Thomas Peterson 23, president; Karl Gerdin '24, secretary.

The students have given the Club their wholehearted support, and Night-School students also have been present. The attendance has varied from 15 to over 50.

The following programs were given:

October 11, 1920: Meeting of organization.

October 25: "Transfinite numbers" by Professor H. W. Reddick.

November 8: "Historical development of the valuation of π" by Reginald Overton '23.

November 22: "Mathematical fallacies" by Karl Gerdin '24.

December 6: "Magic squares" by Harry Serper '24.

December 20: "The trisection of the angle" by Peter Reiss '23.

January 10, 1921: "Non-Euclidean geometries" by Benjamin Levine '21.

January 24: Problem day. Also, election of officers.

February 7: "The fourth dimension" by J. J. Tanzola, instructor.

February 21: "Duality in mathematics" by David Samson '24.

March 7: "Finding the area of a parabola by the method of exhaustion" by Thomas Peterson '23.

March 28: "Numbers which form the sides of a right triangle" by Max Teitlebaum '24.

April 18: "The concept of infinity" by James Greene '21. Business meeting.

<div align="right">(Report by Mr. Gerdin.)</div>

<div align="center">DENISON MATHEMATICS CLUB, Denison University, Granville, O.</div>

<div align="center">[*1918*, 403; *1919*, 308, 362.]</div>

The Denison Mathematics Club had a membership of forty-eight and an average attendance of twenty-two for the first semester of 1920–21. The plan of dividing the club into two groups for some of the meetings, for the freshmen and upper classmen respectively, is still on trial. The freshmen listen to talks on subjects which most of the upper classmen are acquainted with, and the upper classmen discuss topics which are rather advanced for the freshmen. The success of these group meetings is yet doubtful, but hopeful, since the average attendance of the freshmen this year is greater than last year. Problems for the two groups to solve between the times of meeting have stimulated interest.

Programs beginning with the fall of 1919 follow.

October 14, 1919: "Numbers" by Mr. R. A. Sheets, instructor.

October 28: "Arrangement of digits" by Mary Long '20; "Pascal triangle" by Marius Nielson '21; "Russian peasant's method of multiplication" by Esther Weaver '20; "Perfect numbers" by Professor F. B. Wiley.

November 25: "Outlines of some number systems" by Mr. Sheets; "The number system with 12 as a radix" by Richard Howe '20.

December 9: "The Chinese number system" by Hsieh Chang '22.

December 16: "A German astronomer's method of trisecting an angle" by Professor Wiley.

January 13, 1920: "Parallel coördinates" by Professor Wiley.

January 27: "Differential equations" by Professor Anna Peckham.

February 24: "Infinite roots of equations" by Ruby Robinson '21; "Complex numbers" by Burton Chandler '23.

March 23: "Mental tests" by Ruth Hendricks '23; "Mathematics used in the artillery" by Edward Boggs '20.

April 6: "Explanation of the adding machine" by Evangeline Nellis '22; "Use of the planimeter" by Richard Howe '20.

April 20: "Number pairs" by Esther Weaver '20; "Infinitesimals" by Marius Nielson '21.

May 4: "Space filling curves" by Albert Staniland '21; "Complex roots of unity" by William Newbury '23.

May 18: "Famous mathematicians" by Frances King '22; "Fourier series" by Bernard Lemon '22.

May 25: Annual banquet. Professor R. B. Allen of Kenyon College was the guest of honor.

October 5: "Magic Squares" by Mr. R. A. Sheets, instructor.

October 19: "Origin of number systems" by Professor Wiley.

November 2: "Development of number systems" by Grace E. Jefferson, instructor; Talk to freshmen by Professor Wiley.

November 16: "Simple harmonic motion" by Marius Nielson '21; Talk to freshmen by Mr. Sheets.

November 30: "Conic sections" by Grace McGrillis '23; "Numbers" by Mr. Sheets.

December 14: "Inversions" by Professor Peckham.

January 11, 1921: "Solutions of prize problems" by Marius Nielson '21 and Burton Chandler '23. Presentation of prizes.

(Report by Miss Hendricks.)

THE MATHEMATICS CLUB OF GOUCHER COLLEGE, Baltimore, Md.

[*1918*, 357; *1919*, 365; *1921*, 274.]

The programs for the first half of 1920–21 were as follows:

October 21, 1920: "Construction of the nine-point circle" by Eva Lazarus '22; "Proof that the nine-point circle is tangent to the inscribed and escribed circles" by Julia Sprenkel '22.

November 15: "Arithmetic calculation of cube roots and fifth roots" by Mildred Trueheart '22; "The slide rule" by Mary Lemon '22; "Proof of Feuerbach's theorem by methods of elementary analytics" by Professor Florence Lewis.

December 19: "History of three famous problems of construction" by Henrietta Morris '23; "Calculation of the index numbers of commodity prices" by Virginia Gallup '21.

January 13, 1921: "Flatland, by A. Square" by Gertrude Sandlass '23; "The history and significance of the concept of the fourth dimension" by Professor Clara L. Bacon.

February 17: "The theory of geometric inversion" by Margaret Sumwalt '23; "The theory and use of linkages in mechanical constructions" by Rose Diggs '22.

(Report by Professor Lewis.)

THE MATHEMATICS CLUB OF THE UNIVERSITY OF NORTH CAROLINA, Chapel Hill, N. C.

[*1918*, 90, 454.]

The officers elected for the year 1920–21 were: Professor Archibald Henderson, president; Professor A. W. Hobbs, vice-president; Professor J. W. Lasley, Jr., secretary.

The club numbers about fifty. The meetings take the form of mathematical smokers. Two prize problems presented by the Southern Engineering Corporation of Charlotte, N. C., added zest to the work of the club. The following programs have been given:

October 28, 1920: "The spirit of scientific research" by Professor William Cain; "Does minus three times minus three give plus nine?" by Professor Henderson.

November 18: "The contribution of Descartes" by Professor Lasley; "An interesting maximal case" by Herman Baisy, Gr.

December 9: "The geometric proposition and its converse" by Professor A. W. Hobbs; "A problem in envelopes" by Michael Hill, Gr.

January 20, 1921: "The Delian problem" by Professor A. S. Winsor; "Squaring the circle" by J. B. Linker, instructor; "Trisecting an arbitrary angle" by Walter Hook '23.

February 24: "The witch of Agnesi—an application" by Professor O. Stuhlman, of the department of physics; "The road bond issue mathematically treated" by Professor N. M. Paull.

(Report by Professor Lasley.)

THE MATHEMATICAL CLUB OF SMITH COLLEGE, Northampton, Mass.

[*1918*, 91, 455; *1920*, 184, 480.]

It has been the aim to make the meetings very informal, and to invite considerable discussion. Papers have been read during 1920–21 upon the following topics: "Lines of a triangle (altitudes, medians, bisectors)," "Area of a quadrilateral," "Nine point circle," "First work of mathematics printed in the New World," "Brocard points," "Simpson line of a triangle," "Conic sections as known by the Greeks," "Theory of quadratic equations."

The year closed with a social gathering. At the social meeting of the previous year, a play was given: "The Eternal Triangle." The prologue of this play was as follows:

"As is *congruent* with a meeting of the Mathematics Club of Smith College the program for this evening is a *problem* play. We have tried to *plot* in *graphic form* a *problem* which is by no means *imaginary*, but *real* and *common*; namely: 'The *Eternal Triangle*.' Given the three *ele-*

ments of the *triangle*, Mrs. *Adjacent Angle*, her *conjugate*, Mr. *Wright Angle*, and lastly Sir *Vertex*, an operator in home wrecking. In Mr. Wright Angle we find a *mixed expression* of love and business, business having the larger *proportion*. *Radically* speaking, Mrs. Adjacent Angle has an *inclination* towards loving love; and Sir Vertex fills in the *space* from which business has drawn her husband. But now—On with the *demonstration.*" The tragedy closes thus: Adjacent Angle throws herself between the two. "Stop. *Project* your wrath no further. Don't go off on a *tangent*. It was not his fault. It was my *proposition* that he come. We have not lived on a *normal plane*. Your life is one *continuous function*. You scarcely ever go in my *circle*. You—do—not love me. I—" She turns to Sir Vertex who takes her in his arms. Wright Angle. "We have reached a *critical point*. The only *solution* is *division*. Go. Never come within my *radius* again." (Exit Sir Vertex. Adjacent Angle sinks to a chair and holds her head in her hand.)

(Report by Cassandana Page, secretary.)

THE PASCAL CIRCLE, TRINITY COLLEGE, Washington, D. C.

[*1920*, 425, 481; *1921*, 391.]

The following meetings were held—two in March and two in April—and at the close of the year there was a party at which refreshments were served and a puzzle was introduced with mathematical terms applicable to members of the Circle. At the regular meetings problems were frequently introduced and solved.

February: "The foundation of the Smithsonian Institute" by Margaret Crotty '21; "The first mathematical work published in America" by Clara Waldeck '23.

March: "Einstein and his theory" by Margaret Walsh '21; "A mathematical puzzle on the arrangement of coins, based on permutations" by Margaret Christie '23.

"Higher mathematics and chemistry" by Julia Thomas '22; "Two mathematical tombs" by Margaret Kelly '23.

April: "The correlation coefficient and the Rogers tests to determine mathematical ability" by Martha Crowly '22.

"A mathematician in love" (a poem) by Helen Ormand '23; "The place of mathematics in the curriculum" by Mary Brennan '21.

(Report by Miss Walsh.)

THE NEWTONIAN SOCIETY OF THE STATE COLLEGE OF WASHINGTON, Pullman, Wash.

[*1918*, 410.]

During the years 1919–20 and 1920–21 the following papers were read:

"Jordan curves" by Professor C. A. Isaacs; "Crap shooting" by Professor E. C. Colpitts; "Introduction to the fourth dimension" by Vera Roeder '20; "The wheel and shaftings of fourth-dimensional mechanics" by R. B. Kennedy, instructor; "Time as a fourth dimension" by F. N. Bryant, instructor; "History of π" by Corrine Barckly '21; "History of logarithms" by Florence Evans '21; "Perfect numbers" by Professor Colpitts; "War mathematics" by Robert Dixon '20; "Trisection of an angle" by Dorothea Sorenson '20; "One to one correspondence" by F. N. Bryant, instructor; "History of the Newtonian Society" by Eloise Brandt '22; "Area of a quadrilateral" by Alice Tardy '23; "Magic squares" by R. B. Kennedy, instructor; "Codes and ciphers" by Virginia Cooper '23; "What high school students like in mathematics" by Dorothea Sorenson '20; "One basis for business progress with a practical illustration" by Oliver E. Faulkner '21; "The theory of numbers" by Gladys Freeman, instructor; "Differential geometry" by Eloise Brandt '22; "Development of determinants" by Mildred Hunt '24; "Determinants in algebra" by Marian Ullery '24; "Determinants in geometry" by Twila Lewis '24; "The sixth dimension" by Professor Isaacs; "Non-Euclidean geometry" by Professor Colpitts; "Lemoine circles" by Alice Tardy '23; "Life of Newton" by Florence Evans '21; "Who is a mathematician?" by Professor Isaacs; "Limits in geometry" by Grace Barron '23; "Limits in calculus" by H. H. Irwin, instructor; "Probability" by Gwendolyn Thomas '21; "Probability" by R. B. Kennedy, instructor.

(Report by Miss Tardy, secretary.)

THE EUCLID CLUB OF THE UNIVERSITY OF WASHINGTON, Seattle, Wash.

[*1919*, 170.]

In November, 1920, the Mathematics Club of the University of Washington was reorganized under the name of the Euclid Club of the University of Washington, and the following officers were elected: Rubin Raport '23, president; Howard Robertson '23, vice-president; Lillie Siler '21, secretary.

The following programs were given:

December 16, 1920: "Einstein's theory of relativity" by Professor E. T. Bell.

January 20, 1921: "Greek numbers" by Helen Dunn '22.

February 3: "The Cyclo-harmonograph, a machine for drawing curves" by Professor R. E. Moritz (the inventor).

February 15: "Who's who in modern mathematics" by Gustene Rupe '23.

March 10: "Modern mathematical machines and famous mathematicians" by Lillie Siler '21.

April 7: "The use of mathematics in science" by Howard Robertson '23.

May 26: "The proof and use of the planimeter" by Rubin Raport '23.

(Report by Mr. Raport.)

NOTES.

Through the courtesy of one of our contributors, Mr. F. V. MORLEY, a Rhodes scholar from the United States at New College, Oxford, we are permitted to inspect the first two numbers of the manuscript *Proceedings of the Oxford University Undergraduate Mathematical Club*. The Club was started in October, 1920, and seven meetings were held during the year. One paper is read at each meeting and the *Proceedings* contain the complete papers. For the Michaelmas Term the papers were: "John Wallis" by J. S. HUGHES, of New College, and "Some circles connected with the triangle" by H. O. NEWBOLT, of Balliol. For the Hilary Term: "Introduction to inversive geometry" (2 parts) by F. V. MORLEY and "The twisted cubic" by Mr. TITCHMARCH, of Balliol. During the Summer Term two meetings were held in May, and Professor FRANK MORLEY, of Johns Hopkins University, and W. R. BURWELL, of Brown University, were the speakers.

PROBLEMS AND SOLUTIONS.

EDITED BY B. F. FINKEL, OTTO DUNKEL, AND H. P. MANNING.

Send all communications about Problems and Solutions to B. F. FINKEL, Springfield, Mo.

PROBLEMS FOR SOLUTION.

[N.B. Problems containing results believed to be new, or extensions of old results are especially sought. The editorial work would be greatly facilitated if, on sending in problems, proposers would also enclose any solutions or information that will assist the editors in checking the statements. In general, problems in well-known text-books, or results found in readily accessible sources will not be proposed as problems for solution in the MONTHLY. In so far as possible, however, the editors will be glad to assist members of the Association with their difficulties in the solution of such problems.]

2941. Proposed by W. D. CAIRNS, Oberlin College.

$1^2 + 2^2 + 3^2 + \cdots + (n-1)^2$ is a function of n. Find its derivative with respect to n.

2942. Proposed by L. E. DICKSON, University of Chicago.

I am dealt 13 cards at whist. What is the chance that all my cards will be diamonds?